DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 1, 2009 has been entered.

2. This Office Action is also in response to applicant's amendment filed on April 1, 2009, which has been entered into the file.

3. By this amendment, the applicant has amended claims 22, 32 and 37. Claim 37 fails to indicate the amendment to the claim by proper marking. It is therefore not clear if the claim has been amended or not. Correction is needed in the next communication.

4. Applicant indicated that claim 42 is withdrawn. Applicant's attorney Mr. Jonathan Kaplan has been contacted on June 11, 2009 to inquire what exactly the intention for the claim is. Authorization for this examiner's amendment was given in a telephone interview with Mr. Jonathan Kaplan on April 1, 2009.

The application has been amended as follows: claim 42 is canceled.

Claims 22-37 and 39-41 remain pending in this application.

Response to Amendment

5. **The amendment filed on April 1, 2009** is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: claim 22 has been amended to include the phrase "wherein the structure imparted to the light is sufficient without a use of a lens, such that the image display device can show an image that

can be seen in three dimensions". The specification fails to provide positive support for it. It is impossible for the device to display any image if no lens is used. Particularly a diffuser is used that the "image light" from the display will be diffused and no image will be formed not to mention three dimensional image. Some kinds of lens have to be used in the device so that proper image can be viewed.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 22-37 and 39-41 are rejected under 35 U.S.C. 112, first paragraph,** as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejection based on the newly added matters are set forth in the section "response to amendment" above.

8. **Claims 22-37 and 39-41 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification and the claims fail to teach how could the three dimensional image be seen by simply varying the distance between the diffusing layer and the filter. The essential criterions for establishing three dimensional image viewing is by providing left eye perspective image and right eye perspective image and by making the left eye perspective image entering left eye and the right eye

perspective image entering right eye of an observer **respectively**. The claims and specification fail to disclose how could a filter (without explicitly states the structure and function) and a diffusing layer is capable of achieving such. Also the specification fails to teach why by changing the distance between the filter and the diffusing layer will achieve the switch between the three dimensional mode and the two dimensional mode. As demonstrated in the figures of the specification, it is appears that the 3D and 2D modes switching is achieved by varying the distance between the display device and the filter. It is more likely that the modes will be switched between the 2D and 3D by varying the distance between the display device and the filter since it is this distance that decides if 2D mode or 3D mode is achieved. By varying the distance between the diffusing layer and the filter and without specifying the distance between the display device and the filter will not be able to achieve the 2D and 3D switch.

With regard to claim 37, it is impossible to create three-dimensional image viewing for the display device and the filter array has a distance that is zero. The directivity of the light needed for three-dimensional viewing certainly cannot be created.

The claims at this juncture are not enabling the claims of switching between two-dimensional mode and three-dimensional mode.

The applicant being one skilled in the art must understand that by simply moving the diffuser, without specifying the image being displayed to contain left eye and right perspective images, WILL NOT create 3D view.

Claim Objections

9. **Claims 22-37 and 39-41 are objected to because of the following informalities**:

(1). The phrases "can show" and "can be" recited in claim 22 are referred to be "capability" of the device that is not clear if the capability is or is not part of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 22, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Eichenlaub (PN. 6,157,424).

Eichenlaub teaches a *2D/3D image display* serves as the *display with selectable three-dimensional visible or two-dimensional modes* wherein the display comprises *lamps* (102, Figure 14) serve the *illuminating device for* emitting light distribute over an area, *light barriers* (104) serves as the *filter array, having an arrangement of transparent and opaque area segments,* that is arranged before or at the image side of the illuminating device to impart a *mask pattern or structure* to the emitted light for create *directivity* for the light, a *diffuser* (106) serves as the *diffusing layer* arranged before or at image side of the filter array or barriers and a *transmissive image display device* (26, as shown in Figure 7) for forming images intended to be displayed. Eichenlaub teaches that the *distance* between the light *barriers* or the *filter array (or the illuminating device or light source as for claim 42)* and the *diffuser* can be varied, and when the diffuser is at the *first position* (108) the diffusing effect cancels the light directivity caused by the light barrier or filter array to create *two-dimensional viewing mode* and when the diffuser is at the *second position* which is *near or against the illumination device* with the light barriers, the diffuser appears to be *transparent* to the emitted light from the illuminating device and the filter array does not cancel the directivity of the emitted light caused by the filter array to provide a *three-dimensional viewing mode*, (please see Figures 7 and 14, column 12, lines 11-51).

With regard to claim 40, **Eichenlaub** teaches that magnetic coils can be used to accomplish the movement between first and second position, (please see column 12 lines 25-31), wherein magnetic coils are essentially a solenoid.

Claims 22 has been amended to include the phrase "wherein the structure imparted to the light us sufficient without a use of a lens, such that the image display device can show an image that can be seen in three dimensions". Eichenlaub teaches that the 3D display mode and the 2D display mode are achieved by changing the distance between the filter array (104) and the diffusing layer (106, Figure 14). The lenticular lens (24) included is not for achieving three dimensional image viewing since the lens is there for both the 3D and 2D modes and the switching between the modes does not affect by the presence of the lenticular lens. This means the device can shown image that can be seen in three dimensions without the use of a lens. The lenticular lens is used only for *focusing* the light from the illumination device. The three dimensional image viewing is achieved by the combination the filter or light barrier (104) and the position of the diffusing layer being close to the light barrier.

12. Claims 23-26, 30, 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Eichenlaub as applied to claims 22 above, and further in view of the patent issued to Nakayama et al (PN. 5, 831, 765). .

The display with selective three-dimensional visible and two-dimensional mode taught by Eichenlaub as described for claim 22 above has met all the limitations of the claims.

With regard to the feature concerning the filter array or the light barriers being supported by a transparent substrate, (as recited in various claims), this reference does not teach such explicitly, however such feature has to be implicitly met since the black, opaque barriers (104) cannot be present by itself and needed to be supported by certain supporting substrate. **Nakayama** et al in the same field of endeavor teaches a two-dimensional/three-dimensional compatible type image wherein a light separating

device or barrier (Figure 2) having opaque and transparent pattern supported by a transparent glass substrate (113, please see column 7, lines 38-40) is used. **Nakayama** et al also teaches that by changing the distance between the barrier (2, Figures 11 and 12) and the diffuser (5) a switching between 2D mode and 3D image viewing mode can be achieved. It would then have been obvious to one skilled in the art to apply the teachings of **Nakayama** et al to make the light barrier or the filter array explicitly having patterned light absorbing or black material on light transparent substrate for the benefit of providing an explicitly way of making such barriers and for the benefit of making the barrier a separate element from the light source or lamps to create different arrangement designs to fit different application requirements.

With regard to claims 23-25, Eichenlaub teaches that the three-dimensional mode and two-dimensional mode can be switched by varying the distance between the diffuser and light source or the filter array, (please see Figure 14). This variation in distance or change in positions can be achieved either by *moving the diffuser* (106) from a position against the light source or light emitting device for 3D mode to a position (108) *away* from the light emitting device as shown in Figure 14 for 2D mode, or by moving the light emitting device with the light barriers, (please see column 12 lines 37-46). Eichenlaub teaches that the light emitting source is integrally formed with filter array or the light barriers so by moving the light emitting source, the distance between the filter array and the diffuser could be changed. It however does not teach explicitly to move the filter array or the light barriers only. **Nakayama** et al teaches the barrier or the filter array (2, Figures 11-12)) can be formed as separated element from the light emitting device so that the barrier or the filter array, formed on a transparent substrate, (please see the explicit demonstration as in Figures 13 and 14), can be moved between different positions for switching between the 3D mode (Figure 12) and 2D mode (Figure 11). It would then have been obvious to one skilled in the art to modify the display of Eichenlaub for making the light barriers separated element from the light emitting device or lamps for the benefit of creating more options for facilitating the switching between 3D and 2D modes. Eichenlaub teaches that the diffuser (28, Figure 7) can be placed at light

emitting side of the transmissive image display device, (26, Figure 7), but it does not teach explicitly that the diffuser may also be placed at the image viewing side of the display device. Nakayama et al teaches that the 2D/3D compatible image display can have the diffuser (5) either placed at the image side of the display, (please see Figures 11-12) or at the light emission side of the display device (106 as in Figure 2). It would then have been obvious to one skilled in the art to apply the teachings of Nakayama et al to modify the arrangement of Eichenlaub to make the diffuser layer at image viewing side of the display device or even be part of the liquid crystal display panel, (as shown in Figure 15 and 16) for implicitly also provide antiglare effect to the display panel.

With regard to claims 30 and 32, **Eichenlaub** teaches that the diffuser is a variable diffuser wherein the diffusion state can be varied. But it does not teach explicitly that the diffuser may also be permanent diffuser such as diffusing film or ground glass plate. **Nakayama** et al teaches that the diffuser may be formed by formed by diffusing film or ground glass plate, (please see column 11, lines 5-17). It would then having obvious to one skilled in the art to make the diffuser a simple steady diffuser such as diffusing film or ground glass plate for the benefit of reducing the complexity of the display device and cutting cost.

With regard to claim 34, Eichenlaub teaches the image display device is a liquid crystal display device. Nakayama et al also teaches that the display device is a liquid crystal display device with front polarizer layer, (please see Figures 2 and 15) and the diffuser may either be at the light source side or the image viewing side with diffuser be within the LCD display. Although this reference does not teach explicitly to include a second diffuser to function as antiglare layer, however to provide antiglare sheet at front surface of the display device is common practice in the art for improving the image quality.

13. Claims 27-29, 31, 33, 35-37, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Eichenlaub as applied to claim 22 above, and further in view of the patent issued to Inoguchi et al (PN, 6,061,179).

The display with selective three dimensional visible and two dimensional mode taught by Eichenlaub as described for claim 22 above has met all the limitations of the claims.

With regard to the feature concerning the filter array or the light barriers being supported by a transparent substrate, (as recited in various claims), this reference does not teach such explicitly, however such feature has to be implicitly met since the black, opaque barriers (104) cannot be present by itself and needed to be supported by certain supporting substrate. **Inoguchi** et al in the same field of endeavor teaches a stereoscopic image display apparatus with two dimensional image display switching function wherein a mask pattern that is moved to provide the switching between 2D mode and 3D mode and the mask pattern is formed by patterning light absorbing or reflective materials on a transparent substrate such as glass, (please see column 4, lines 13-18). It would then have been obvious to one skilled in the art to apply the teachings of **Inoguchi** et al to make the light barrier or the filter array explicitly having patterned light absorbing or black material on light transparent substrate for the benefit of providing an explicitly way of making such barriers and for the benefit of making the barrier a separate element from the light source or lamps to create different designs for the arrangement for fitting different application requirements. .

With regard to claims 27-29, Eichenlaub teaches that the three-dimensional mode and two-dimensional mode can be switched by varying the distance between the diffuser and light source or the filter array, (please see Figure 14). This variation in distance or change in positions can be achieved either by *moving the diffuser* (106) from a position against the light source or light emitting device for 3D mode to a position (108) *away* from the light emitting device as shown in Figure 14 for 2D mode, or by moving the light emitting device with the light barriers, (please see column 12 lines 37-46). Eichenlaub

teaches that the light emitting source is integrally formed with filter array or the light barriers so by moving the light emitting source, the distance between the filter array and the diffuser will be changed. It however does not teach explicitly to move the filter array or the light barriers only. **Inoguchi** et al teaches the mask or the filter array can be formed as separated element from the light emitting device so that the mask or the filter array, formed on a transparent substrate, (please see the explicit demonstration as in Figures 13 and 14), is moved between different positions for switching between the 3D mode (Figure 13) and 2D mode (Figure 14). It would then have been obvious to one skilled in the art to modify the display of Eichenlaub for making the light barriers separated element from the light emitting device or lamps for the benefit of creating more options for facilitating the switching between 3D and 2D modes. Eichenlaub teaches that the diffuser (28, Figure 7) can be placed at light emitting side of the transmissive image display device, (26, Figure 7). With regard to claim 27, the diffuser is supported by a transparent substrate.

With regard to claim 31, Eichenlaub teaches that for 2D mode the distance between the diffuser and the filter array is sufficiently large for the diffusing effect to occur for canceling the light directivity caused by the filter array, and for 3D mode the diffuser is placed against or near the filter array for not canceling the directivity of the light, (please see column 12). Although it does not specify the specific number ranges of the distance, such modifications are considered to be obvious to one skilled in the art since it merely is matters of design choices for fitting the specific size requirement of the display.

With regard to claims 33 and 35, Eichenlaub teaches that the diffuser may be a variable diffuser and different sections of the diffuser can be selected to be either transparent or diffusing in order to create 2D viewing widow within 3D viewing mode, (please see Figure 8 and column 9, lines 23-48).

With regard to claim 36, both **Eichenlaub** and **Inoguchi** teach that the filter array has opaque and transparent segments that form a two dimensional structure, however they do not teach explicitly that the filter array is formed by processed photographic film. However such modification would have been

obvious to one skilled in the art for the benefit of using alternative means to provide the same opaque and transparent structure.

With regard to claim 37, it is obvious matters of design choice for one skilled in the art to design the actual distance between the filter array and the display device for facilitate the display device.

With regard to claim 39, **Eichenlaub** teaches that the light barrier or the filter array can be integrally formed with the light emission device but it does not teach explicitly to include a mirror well. . Yamaguchi in the same field of endeavor teach that the backlight section and filter array (14, Figure 1) include a mirror well (24a) is arranged surround the backlight section and the filter array for allowing the light illumination more efficiently. It would have been obvious to one skilled in the art to make the backlight source and the filter array to ensure the illumination more efficiently. With regard to claim 39, the mirror well (24a) is arranged normal to the filter array.

With regard to claim 41, **Eichenlaub** teaches the movement is achieved by using solenoid but it does not teach explicitly that it is achieved manually. However it would have been obvious to one skilled in the art to also make the movement manually as an alternative method to achieve the movement for the benefit of make the manufacture less costly.

Response to Arguments

14. Applicant's arguments filed on April 1, 2009 have been fully considered but they are not persuasive. The newly amended claims have been fully considered and they are rejected for the reasons stated above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Audrey Y. Chang, Ph.D.

/Audrey Y. Chang/
Primary Examiner, Art Unit 2872